

HIRDLS

SW-HIR-2012

HIGH RESOLUTION DYNAMICS LIMB SOUNDER

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Subject/Title:

H2BOP Overview

H2BOP interpolates from altitude to pressure vertical grids, calculates GPH and writes out a HIRDLS2ALL file. Like all of the rest of L2, it operates on one day at a time. **H2BOP – “Build Output” – Converts a HIRPROF (HIRDLS profiles on altitude grid) to HIRDSS2ALL (HIRDLS profiles on pressure grid)**

Keywords:

Purpose of this Document:

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EOS

H2BOP Overview

H2BOP interpolates from altitude to pressure vertical grids, calculates GPH and writes out a HIRDLS2ALL file. Like all of the rest of L2, it operates on one day at a time.

Retrieve input and output filenames

Form output vertical pressure grid

Open input HIRPROF for reading and create output HIRDLS2ALL file (read in the HIRDLS2ALL definition file and initialize the HIRDLS2ALL output file)

Read HIRPROF file header and static data

Call routine to get list of 2 dimensional (2D) species and error fields and 1 dimensional (1D) real, integer*8 and character fields to read from input HIRPROF file (information comes from the HIRDLS2ALL definition file and will be used in the dynamic file reading later)

Read 2D pressure field from HIRPROF file for use in interpolation

For each CloudFlag profile, when converting from altitude to pressure coordinates, set the CloudFlag from the altitude right below each output pressure level (effectively moves the clouds up slightly).

Using the dynamic reading routines, read the different types of data (1D bytes, 1D character, 2D real, and 2D bytes)

Close the HIRPROF file

Determine where the precision fields start in the 2D real field name list (*They MUST be listed in the definition file after all of the species*)

Interpolate all of the 2D data fields (stopping once the precision fields are encountered in the definition file list).

Convert TanHghtNomAlt and SmthTanHghtNomAlt from kilometers to meters

Adjust the CloudContaminationField so that the flag is one pressure level higher (in space) above the CloudTopPressure location

Calculate the GPH

Write out the HIRDLS2ALL file

Determine and write out the metadata to the output HIRDLS2ALL file

Augment the HDF file with the dimension scales to support netCDF reads